CLAIMS

What is claimed is:

1. A method for multiple inputs, multiple outputs (MIMO) power spectral density (PSD) allocation in a digital subscriber line (DSL) system, the method comprising:

monitoring system performance by performing a multi-ended line test (MELT);

processing the MELT and,

allocating PSD based on at least one of system coupling power and system traffic.

2. The method of claim 1 wherein performing a MELT further comprises:

dynamically determining the near end cross talk (NEXT)/ECHO couplings at a customer premises (CP) location.

3. The method of claim 1 wherein performing a MELT further comprises:

dynamically determining the near end cross talk (NEXT)/ECHO couplings at a central office (CO) location.

4. The method of claim 1 wherein performing a MELT further comprises:

dynamically determining the far end cross talk (FEXT) couplings at a customer premises (CP) location.

5. The method of claim 1 wherein performing a MELT further comprises:

dynamically determining the far end cross talk (FEXT) couplings at a central office (CO) location.

6. The method of claim 1 wherein processing the MELT further comprises processing the MELT by a disruptive method.

7. The method of claim 1 wherein processing the MELT further comprises processing the MELT by a non-disruptive method.

8. The method of claim 7 wherein the non-disruptive method further comprises an active method.

9. The method of clam 7 wherein the non-disruptive method further comprises a passive method.

10. The method of claim 1 wherein the allocation of PSD based upon system coupling power further comprises implementing a full mask control scheme.

11. The method of claim 1 wherein the allocation of PSD based upon system coupling power further comprises implementing a selective bit control scheme.

12. The method of claim 1 wherein the allocation of PSD based upon system coupling power further comprises implementing a power swap scheme.

13. A system for dynamically monitoring and allocating upstream and downstream power spectral density (PSD) of a transceiver set, the system comprising:

a monitor for performing multi-ended line tests (MELT);

a controller, responsive to the monitor, for dynamically allocating upstream and downstream PSD; and

a table of upstream PSD and downstream PSD for each time (t) and each line.

14. The system of claim 13, wherein the monitor is receptive to *a priori* information from other system levels.

15. The system of claim 13, wherein the controller is receptive to *a priori* information from other system levels.